BEFORE
THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

DOCKET NO. 2020-242-E

IN RE:	)	
Enrique McMilion, Jr.,	)	
Complainant/Petitioner	)	**DIRECT TESTIMONY OF DONALD SCHNEIDER JR. FOR DUKE ENERGY CAROLINAS, LLC**
v.	)	
Duke Energy Carolinas, LLC,	)	
Defendant/Respondent	)	

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Donald L. Schneider Jr., and my business address is 400 South Tryon Street, Charlotte, North Carolina 28202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Duke Energy Business Services, LLC ("DEBS"), as General Manager, Advanced Metering Infrastructure ("AMI") Program Management. DEBS provides various administrative and other services to Duke Energy Carolinas, LLC ("DEC" or the "Company") and other affiliated companies of Duke Energy Corporation ("Duke Energy").

Q. PLEASE BRIEFLY DESCRIBE YOUR DUTIES AS GENERAL MANAGER, AMI PROGRAM MANAGEMENT, FOR DUKE ENERGY.

A. My duties and responsibilities include managing the project execution of all AMI or "smart meter" related projects for all Duke Energy jurisdictions, including DEC. I am also responsible for reporting and mapping related to AMI, as well as system integrations and upgrades involved in the control of AMI communication networks and management of AMI data.

Q. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL QUALIFICATIONS.

A. I received a Bachelor of Science Degree in Electrical Engineering from the University of Evansville (Indiana) in 1986. Upon graduation, I was employed by Duke Energy Indiana (then known as Public Service Indiana) as an electrical engineer. Throughout my career with Duke Energy, I have held various positions

of increasing responsibility in the areas of engineering and operations, including distribution planning, distribution design, field operations, and capital budgets. In 2006, I was named General Manager, Midwest Premise Services, responsible for managing all of Duke Energy's Midwest premise service and meter reading departments. Following this, in 2008, prior to the Duke Energy/Progress Energy merger, I was promoted to a position responsible for managing the project execution for all Grid Modernization projects in the field, including both AMI and Distribution Automation devices, for all legacy Duke Energy jurisdictions. In 2012, following the Duke Energy/Progress Energy merger, I was named to my current position. Additionally, I have been registered as a professional engineer with the State Board of Registration for Professional Engineers in the state of Indiana since 1995.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION OR ANY OTHER REGULATORY BODIES?

A. I submitted testimony in the most recent DEC and Duke Energy Progress ("DEP") rate cases in Docket Nos. 2018-318-E and 2018-319-E. Additionally, I have testified for DEC and DEP in North Carolina before the North Carolina Utilities Commission; for Duke Energy Ohio before the Public Utilities Commission of Ohio; for Duke Energy Kentucky before the Kentucky Public Service Commission; and, for Duke Energy Indiana before the Indiana Utility Regulatory Commission in cases related to AMI and smart grid topics.

I also prepared and filed testimony in a previous AMI-related complaint proceeding involving Mr. McMilion in Docket No. 2018-379-E. The Commission dismissed that complaint, as well as two subsequent AMI-related complaints filed by Mr. McMilion in Docket Nos. 2019-230-E and 2019-331-E.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to describe the Company's use of AMI technology, to highlight some of the benefits to customers of the use of AMI technology, to discuss the Company's opt-out program, and to provide information as to the meters used at Complainant's address.

Q. WHAT IS AMI?

A. AMI is the term used to refer to a comprehensive metering solution – including meters, communication devices, communication networks, and back office systems – used to create two-way communications between customer meters and the utility. It is an overall metering solution, as opposed to just a new type of meter, that allows for remote meter reading and eliminates walk-by and/or drive-by meter reading.

AMI allows customers access to more detailed usage information (down to the hour) via the Duke Energy online customer portal. Additionally, service connections and disconnections can be performed remotely for the majority of customers who are starting and/or stopping service, again, eliminating the need for a technician to come to the customer's premise. During storm outages, damage assessment and repair verification can be done much more quickly when customers have a smart meter.

Q. IS AMI TECHNOLOGY NEW TO THE STATE OF SOUTH CAROLINA?

A. No. As noted in Appendix J of the 2016 South Carolina State Energy Plan,[1] AMI technology is not new to South Carolina. By 2016, each of the utility companies in the state had installed at least some AMI meters, and South Carolina's electric cooperatives already had a 92 percent penetration of AMI metering by then. Figure 1 below is from the 2016 South Carolina State Energy Plan and provides details on AMI penetration in South Carolina as of the date of that report.

Figure 1: Smart Meter Penetration in South Carolina[2]

Smart Meter Penetration in South Carolina						
Utility	Total Number of Meters	Manually Read Meters	AMR Meters	AMI Meters	Number of Meters Time of Use Rate Ready	Number of Meters Implementing Time of Use Rate
SC Electric Cooperatives	756,137	-	58,412	697,726	477,402	54,035
Duke Energy Carolinas	587,976	8,806	485,119	94,051	94,051	5,609
Duke Energy Progress	172,549	2,988	161,337	8,224	8,224	4,977
Santee Cooper	172,362	57,991	114,014	357	66	66
SCE&G	696,410	178	686,058	10,174	10,174	1,341
Municipalities	172,749	45,298	82,260	44,813	39,202	27,163
Total	2,558,183	115,261	1,587,200	855,345	629,119	93,191

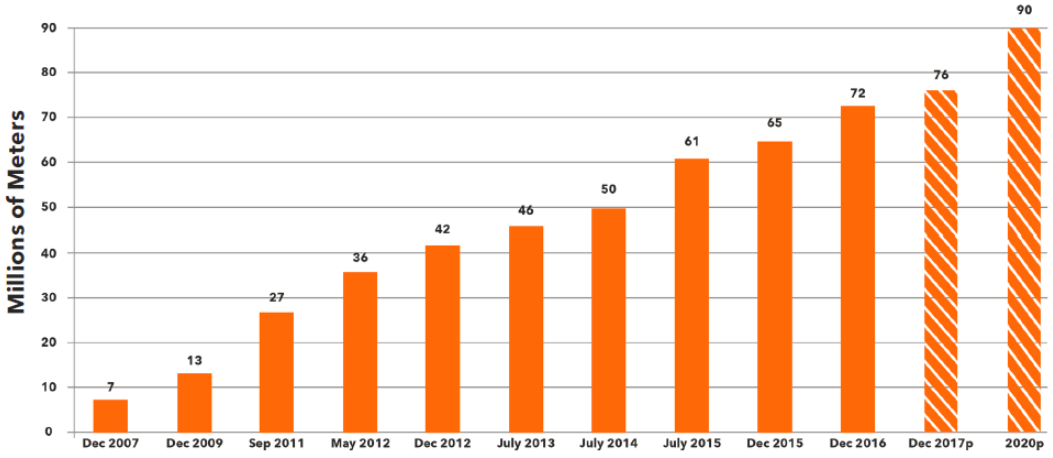
According to research by the Edison Foundation,[3] smart meter installations have been growing dramatically since 2007. Figure 2 below illustrates AMI penetration nationwide, as calculated by the Edison Foundation.

[1] Office of Regulatory Staff, South Carolina State Energy Plan (2016), *available at* http://www.energy.sc.gov/files/Energy%20Plan%2003.02.2018.pdf.

[2] 2016 South Carolina State Energy Plan Appendices at 123, *available at* http://www.energy.sc.gov/files/Energy%20Plan%20Appendicies%2003.02.2018.pdf.

[3] Adam Cooper, Electric Company Smart Meter Deployments: Foundation for a Smart Grid (Dec. 2017)

Figure 2: U.S. Smart Meter Installations[4]



According to the U.S. Energy Information Administration, in 2019, U.S. electric utilities had about 94.8 million AMI meter installations, about 88% of which were for residential customers.[5]

Q. PLEASE DESCRIBE THE IMPLEMENTATION OF AMI ACROSS THE DEC SOUTH CAROLINA SYSTEM.

A. DEC had approximately 95,000 smart meters installed in South Carolina before beginning its full deployment in 2016. DEC currently has installed approximately 625,000 smart meters in its South Carolina service territory and deployment is now complete. The Company has begun to offer new customer services and programs enabled by the AMI meter such as Prepaid Advantage, Usage Alerts, and Pick Your Due Date.

[4] *Id.*

[5] U.S. Energy Information Administration, FAQs, *available at* https://www.eia.gov/tools/faqs/faq.php?id=108&t=3 (last updated Nov. 12, 2020).

Q. IS THERE AN ALTERNATIVE SOLUTION FOR CUSTOMERS WHO DO NOT WISH TO HAVE A SMART METER?

A. Yes. The Commission approved Rider MRM, Manually Read Meter Rider, on November 17, 2016 ("Rider MRM" or the "opt-out program"), which addresses the customers who did not wish to have a smart meter installed. The Company began enrolling customers in the opt-out program in November 2017, after the completion of necessary IT system changes.

Under the opt-out program, rather than electricity usage from the smart meter being communicated to the Company via radio frequency, the electricity usage is instead read manually from the smart meter (that has the radio transmitter/receiver disabled) by a meter reader physically visiting the premises. As acknowledged in the Company's application in Docket No. 2016-354-E, there are additional costs to provide this manual service under that rider, including initial setup costs and ongoing costs related to reading the meter. While customers receiving service under the MRM Rider are required to pay those additional costs of providing this service, the Rider permits customers with medical issues to opt for a manually read meter without having to pay the associated fees. This medical opt-out option was approved by the Commission through Order No. 2019-429, Docket No. 2016-354-E, issued on June 12, 2019.

Q. HOW DOES THE COMPANY COLLECT METER DATA UNDER THE OPT-OUT PROGRAM?

A. Rather than smart meter electricity usage data being communicated to the Company via radiofrequency, under the opt-out program, the meter is read manually by a meter reader physically visiting the service address. The meter reader manually collects the kilowatt hour reading on the customer meter's register display, and the Company collects no other data from the meter.

Q. HOW IS THE INFORMATION STORED WITHIN THE METERS PROTECTED?

A. The Company's meters have multiple integrated security measures, the electricity usage information stored in the meter is encrypted, and no customer-identifying information, such as names or addresses, is stored in the meters.

Q. HAS THE COMPANY COMMUNICATED ITS ALTERNATIVE METERING SOLUTION TO THE COMPLAINANT?

A. Yes. The Company has communicated with Mr. McMilion extensively over the past several years in an attempt to alleviate his concerns and offer him an alternative metering solution. However, Mr. McMilion has declined to enroll in the MRM Rider.

Q. WHAT METERS HAVE PREVIOUSLY BEEN USED AT MR. MCMILION'S PREMISES?

A. Mr. McMilion's property had been served by an Automated Meter Reading ("AMR") meter since before Mr. McMilion took over service at the property in 2013. An AMR meter is either a digital meter with a built-in radio or an analog meter retrofitted with a radio transmitter. Mr. McMilion's AMR meter was an

analog meter retrofitted with a radio transmitter. The AMR meter transmits energy usage data using radio frequencies communicating on a 900 MHz radio frequency to our vehicle driving by the location. Because Mr. McMilion failed to enroll in the MRM Rider, the AMR meter was replaced with an AMI meter on October 12, 2020. While Mr. McMilion has requested the installation of an analog meter, analog meters are now obsolete, are no longer supported by the Company, and have not been manufactured by major manufacturers for some time.

Q. ARE AMI METERS SAFE?

A. The AMI meters used by the Company meet all applicable safety standards established by the Federal Communications Commission. AMI meters utilize the frequencies 902 MHz to 928 MHz, the same portion of the radiofrequency spectrum utilized by other devices such as garage door openers and baby monitors. Further, AMI meters are not constantly emitting radio frequencies. Over a given 24-hour period, these meters transmit approximately three minutes, translating to a daily duty cycle of 0.21%. Put another way, these meters are not emitting radiofrequencies for 99.79% of a typical day. I am aware of no credible information source that calls into question the safety of the AMI meters used by the Company.

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.